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**New study confirms landfill is safe for PVC disposal**

The findings of a major new independent study released today confirm that the presence of Polyvinyl Chloride (PVC) in landfill does not constitute a significant risk to the environment.

The three-year research project provides clear answers to questions that have been raised over the disposal of PVC. It concludes that landfill should not automatically be rejected as a waste management option for this widely used material.

With more than half of consumer waste currently going into landfill, the findings of this study provide important information on the long-term behaviour of PVC for the European authorities when they develop future waste management policies.

In 1996, as part of the industry's commitment to provide verifiable data about the lifecycle of PVC, an independent study on PVC in landfill was commissioned. It is a joint initiative between the European Council of Vinyl Manufacturers, the European Council for Plasticisers and Intermediates, the European Stabiliser Producers Association, the Organotin Environmental Programme Association and Hydro Polymers.

The study was carried out by experts from three Universities in Germany and Sweden, and in consultation with the Swedish Environmental Protection Agency. The long-term behaviour of various PVC products was evaluated through laboratory simulation assays and analysis of leachate samples from full-scale landfill sites. Potential sources of vinyl chloride in landfill gas and the fate of additives released as by-products of PVC breakdown were also investigated.

The research revealed that PVC is resistant to breakdown under landfill conditions. Although partial loss of plasticisers and stabilisers may occur, concentration levels in leachate do not constitute a risk to the environment. Metal levels within leachate are not affected by the presence of PVC and concentrations of vinyl chloride in landfill gas do not come from PVC.

The results of the study support industry initiatives to tackle environmental concerns relating to PVC at the end of its lifecycle.

Notes to editors

1. Copies of the final research report into the long-term behaviour of PVC in landfill are available from ECVI at the address given below.
2. The research was conducted by the Department of Waste Management at the Technical University of Hamburg-Harburg (Germany), the Department of Water and Environmental Studies at the University of Linköping (Sweden) and the Department of Polymer Technology at the Chalmers Technical University of Gothenburg (Sweden). The scientific advisory board comprised academic experts from the College of William and Mary in Williamsburg (USA), the GSF Institute of Toxicology in Munich (Germany) and the Swedish Environmental Protection Agency.
3. The study sought to address three major concerns:
 - The possibility for PVC degradation and its potential contribution to concentrations of vinyl chloride monomer in landfill gas.
 - The possible release of PVC additives during degradation and their associated environmental hazards.
 - The acceptability of landfill as a waste management option for PVC products.
4. The long-term behaviour of various PVC products was investigated in laboratory-scale landfill simulation assays, incubating selected PVC products in municipal solid waste under enhanced

landfill conditions.

5. Leachate samples from full-scale landfill sites in Sweden, Germany and Italy were also collected and analysed in order to assess the occurrence of phthalates and their degradation products as well as organotin compounds.
6. The environmental impact of PVC products under landfill conditions was evaluated using the methodology for screening risk assessment proposed by the European Commission.
7. In the context of this study, landfill describes the controlled disposal of municipal solid waste in properly engineered sites. Once deposited in a landfill, waste is subject to a variety of physio-chemical and biological ageing processes.
8. Leachate is the liquid effluent resulting from infiltration of precipitation into a landfill. As precipitation percolates through the waste, leaching occurs involving the potential dissolution of compounds. Leachate therefore contains concentrations of a wide variety of compounds relating to the mix of waste present within the landfill.
9. Additives is the general term used to describe the wide range of products, including stabilisers and plasticisers, that are combined with PVC to give it the desired application properties. Stabilisers are added to PVC to help in the processing operation and to extend product life by reducing unwanted chemical reactions due to, for example, exposure to light. Plasticisers, such as phthalates, are added to PVC to make it flexible.
10. Vinyl chloride is the monomer from which PVC is derived.

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